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DEPARTMENT OF AGRICULTURE

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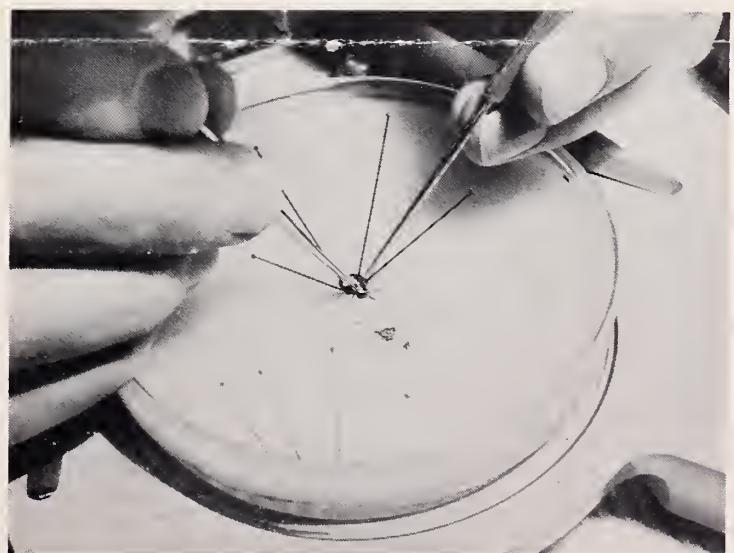
Story of Progress: Agricultural Research in 1958

Agricultural sciences made progress on a broad front throughout 1958, a year which saw the U. S. Department of Agriculture put more stress on basic studies than at any time previously. The Department's Agricultural Research Service announced late in the year that it had in operation 13 pioneering research laboratories, designed to explore beyond the present limits of knowledge. Numerous new findings were reported in the fields of farm research, utilization research, home economics research, and in the work of the ARS regulatory divisions. The following pictures, taken for the Agricultural Research Service, illustrate the year's highlights. They are designed to supplement the year-end reviews of ARS activity as reported in USDA press releases Nos. 3309-58, 3310-58, 3311-58 and 3312-58.



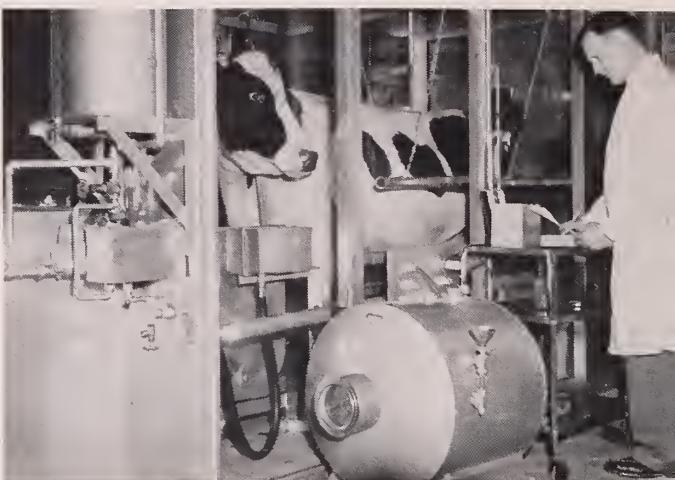
N-23931. The Pioneering Research Laboratory for Mineral Nutrition of Plants at Beltsville, Md., is concerned with how plant nutrients and wastes pass through cell walls. Here, its chief scientist, Dr. Sterling B. Hendricks, studies chromatograph negative of barley root extract.

N-24352. At the Pioneering Research Laboratory for Insect Physiology, also at Beltsville, insect life processes and adaptability are being studied. Above, organs of an anesthetized fly are removed to study effects of chemical insecticides.





N-29677. Sonics may help livestock producers. An adaptation of World War II sonar safely measures the size of a potential steak or chop by sending ultrasonic waves through a live animal. USDA scientists demonstrate its use.



N-25297 Cow enclosed by glass at USDA's energy metabolism laboratory at Beltsville is being studied to reveal how she uses feed to make milk. Everything that enters or leaves her stall is measured; every one of her actions recorded.



N-27029. Automation in the care and feeding of hogs is now possible as a result of cooperative research with the Illinois Agricultural Experiment Station. Motor driven feeders supply feed troughs either constantly or at specified times.



No. 6: BN-4757. Pie-shaped corrals, like this one in San Diego county, Calif., enable dairy workers to handle more animals faster. Milking barn is at the hub. Advantage of the arrangement is elimination of much walking and gate control.



BN-6742X. Six spikes at right are representative of newly-developed perennial-type wheat hybrids that have disease and insect resistance, erosion control capacity, high protein content, and usefulness as forage crops. Commercial varieties, left, have fewer seeds per head.



BN-6121. Full blossom chrysanthemums grown in pots are just one possible benefit from applying Amo-1618, a chemical growth regulator that retards stem growth. Plant at left is untreated while the others have received increasingly larger amounts of chemical.



N-24997. Plant insect pests may be harder or easier to kill depending upon rates of fertilizer application, preliminary USDA studies show. Entomologist Thomas Henneberry counts mites from pole lima beans fed different fertilizer formulations.



BN-6015X. A rain simulator for measuring water runoff and soil erosion has been developed by USDA in cooperation with Purdue University. Experiments with it show the comparative effectiveness of different soil and water management practices.



BN-7088X. Side delivery rake removes a heavy mulch sprayed with radioactive isotopes in Beltsville experiments to find effective methods of removing radioactive fallout from agricultural land. Protective clothing and masks are worn by workers.



N-25638. Covers made of black polyethylene, vinyl, or neoprene-coated nylon may make horizontal silos more popular than ever among U. S. farmers. Plastic covers provide an efficient air seal and greatly reduce surface spoilage, experiments show.



N-22044. Radiant energy is the key to an attempt, begun in July to eradicate the screwworm, a livestock pest, (infected animal, above) from the Southeast. Male screwworm flies, made sterile by exposure to cobalt-60, are released to saturate wild population and reduce female chances of mating with normal males.



BN-6520. Spraying of nearly 5 million acres against grasshoppers in 10 western States during the summer presented significant damage to wheat and other small grains. Specially equipped plane, above, is laying insecticide down on rugged rangeland that would be hard to treat in any other way.



EPQ-1600. The battle to eradicate the imported fire ant, a destructive and annoying pest, from 10 States in the South moved ahead throughout the year with treatment of 360,000 acres. Closeup, above, of a fire ant mound in an infested field.

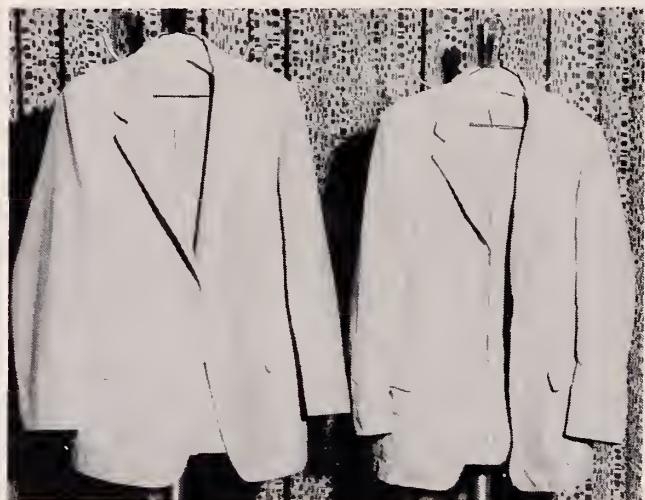


BN-7040X. Research is bringing nearer the development of a commercial quality dry whole milk. Milk crystals that reconstitute readily in water can be made from dry milk foam, shown above. Low cost packaging and longer shelf life are current research objectives.

DN-1353. A new daily food guide developed by USDA nutritionists makes it possible for both dietitians and homemakers to select nutritious meals easily from four groups of foods: milk, meat or an alternate, vegetables and fruits, breads and cereals.



BN-6931. Freshly cut vegetable is pressed against chemically treated paper disc to indicate if vegetable has been prepared properly for freezing. Development of the discs, which record enzyme activity, gives industry quick, low-cost way of guaranteeing quality.



N-25069. A promising new experimental wash-wear cotton finish was applied to the jacket on the left. Jacket at right is untreated. Both jackets have been washed and dried in a tumble drier. Neither of them has been pressed.



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